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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,429	07/06/2001	Andrew Daiber	NUFO007	4974

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BLAKELY SOKOLOFF & ZAFMAN LLP  
12400 WILSHIRE BOULEVARD  
7TH FLOOR  
LOS ANGELES, CA 90025

EXAMINER

JACKSON, CORNELIUS H

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/900,429

Applicant(s)

DAIBER, ANDREW

Examiner

Cornelius H. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Acknowledgment*

1. Acknowledgment is made that applicant's Amendment, filed on 13 January 2003, has been entered. Upon entrance of the Amendment, claims 1-3, 7, 10, 13-14, 16-17, 20, 23-26, 28-32 were amended and claim 33 was added. Claims 1-33 are now pending in the present application.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 30 - 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Fee (5943352). Fee disclose a laser apparatus **Figs. 1-3**, comprising: a gain medium **124**; a reflector **208A-C**, the reflector **208A-C** and an output facet of the gain medium **124**

defining a laser cavity; an optical output assembly **126** optically coupled to the gain medium **124**; and means for providing selective thermal control **308** to the optical output assembly **126** independently from the reflector **208A-C**.

Regarding claim 31, Fee discloses means for providing selective thermal control to the optical output assembly **126** independently from the reflector **208A-C**.

Regarding claim 32, Fee discloses a thermally conductive substrate **302**, the optical output assembly **126** mounted on the thermally conductive substrate **302**; and a thermoelectric controller **304** joined to the thermally conductive substrate **302**, the optical output assembly **126** configured to be thermally controlled by the thermoelectric controller **304** via thermal conduction through the substrate **302**.

Regarding claim 33, Fee discloses a thermally conductive substrate **302**, the gain medium **124** mounted on the thermally conductive substrate **302**; and a thermoelectric controller **304** joined to the thermally conductive substrate **302**, the gain medium **124** configured to be thermally controlled by the thermoelectric controller **304** via thermal conduction through the substrate **302**.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sesko et al. (5438579). Sesko et al. teach a laser apparatus **Figs. 2A-F** comprising a gain medium **1** having second **21** and first **22** output facets; a reflector **11**, the reflector **11** and the second output facet **21** defining an external cavity; an optical output assembly **2A** optically coupled to the second output facet **21**; a thermally conductive substrate, the gain medium **1** mounted on the thermally conductive substrate, a thermoelectric controller joined to the thermally conductive substrate and the gain medium **1** configured to be thermally controlled by the thermoelectric controller via thermal conduction through the substrate; and the reflector **11** positioned remotely from the thermally conductive substrate and the thermoelectric controller, **see col. 7, lines 57-59 and col. 13, lines 11-18**. Sesko et al. fails to teach the optical output assembly mounted on the thermally conductive substrate and the optical output assembly being configured to be thermally controlled by the thermoelectric controller via thermal conduction through the substrate. Instead Sesko et al. teach the first output facet **21** is used as an output coupler, as a design choice, **see col. 13, lines 26-30**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to separate the functions of the output facet between the facet and another optical coupling device, since it has been held that constructing a formerly integral structure in various elements (or formerly separate elements into one) involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

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Regarding claims 14, 23, 25-27 and 30-33, Sesko et al. teaches all the stated limitations, **see rejection to claim 1 above.**

Regarding claims 2, 6, 8, 11-13, 15, 17-18 and 20-22, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 3, 16 and 24, Sesko et al. teach a channel selector **5**; a tuning assembly operatively coupled to the channel selector **5** and configured to adjust the channel selector **5**; and the channel selector **5** and the tuning assembly positioned remotely from the substrate, **see col. 13, line 46-col. 14, line 65.**

Regarding claims 4, 5 and 19, Sesko et al. teach a first and second collimating lens **2A(B)** optically coupled to an output facet and configured to be thermally controlled, **see rejections above.**

Regarding claim 7, Sesko teach all the stated limitations, **see col. 1, lines 24-26.**

Regarding claim 9, Sesko teach a grid etalon **4**, **see rejections above.**

Regarding claim 10, Sesko teach all the stated limitations, **see col. 1, lines 24-26 and col. 9, lines 3-14.**

Regarding claims 28 and 29, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

***Response to Arguments***

6. Applicant's arguments filed 13 January 2003 have been fully considered but they are not persuasive. Applicant argued the following:

a. Fee fails to disclose the limitation of "an optical output assembly coupled to the gain medium".

b. Examiner has failed to establish a prima facie case of obviousness because the cited combination does not teach or suggest all of the elements recited in the claims.

c. Examiner's assertion fails to teach or suggest at least one of the claim limitations as expressly recited by claim 1. In particular, a "optical output assembly mounted on said thermally conductive substrate" and a "optical output assembly configured to be thermally controlled by said thermoelectric controller via thermal conduction through said substrate."

Examiner reply to Applicant's arguments are as follows:

a. As stated in the rejection above of claim 30, Fee does disclose an optical output assembly **126** optically coupled to the gain medium **124**. Although Fee states that the laser used is a diode, Fee's diode laser comprises all the limitations as expressly recited in the claim.

b. Sesko et al. disclosed each and every element of Applicant's invention, only difference being that the rear facet took on the combined function of being facet and the optical output assembly. Sesko et al. also disclosed that when the rear facet takes on

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this dual function the reflectivity is lowered. It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate the optical coupling (output assembly) function from the rear facet so that the facet may function as a typically mirror having a reflectivity greater than 90% by adding an optical coupler (output assembly).

c. Since rear facet is mounted on a thermally conductive substrate and configured to be thermally controlled by said thermoelectric controller via thermal conduction through said substrate, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add an optical coupler (output assembly) on the same substrate of the rear facet when separating the two functions of the rear facet, as stated in reply b above.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pease et al. (6304586) **Fig. 2, col. 13, line 53-col. 14, line 60**, discloses a similar invention.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

  
chj

March 20, 2003

  
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